CLAIMS

1. A radar including a transmission-and-reception element
for transmitting a transmission signal including an
5   ascending-modulation section where a frequency gradually
increases and a descending-modulation section where the
frequency gradually decreases in an alternating manner and
receiving a reception signal including a reflection signal
transmitted from an object, a frequency-analysis element for
10 obtaining data on the frequency spectrum of a beat signal
indicating the frequency difference between the transmission
signal and the reception signal, a pair-extraction element
for extracting a pair of first and second projection
portions caused by one and the same object, where the first
15 projection portion is observed in the frequency spectrum of
a beat signal of the ascending-modulation section and the
second projection portion is observed in the frequency
spectrum of a beat signal of the descending-modulation
section, and a predetermined element for detecting at least
20 one of the relative distance and relative speed of the
object based on frequencies of the two projection portions
forming the pair, wherein a predetermined element for
inputting data on the moving speed of a moving object having
the radar mounted thereon is provided, and the pair-
25 extraction element inversely calculates the frequency

difference between the projection portions observed in the frequency spectrums of the beat signals in the ascending-modulation section and the descending-modulation section based on the moving-speed data, where the frequency

5 difference corresponds to a stationary object, and extracts a pair corresponding to the frequency difference on a priority basis.

2. The radar according to Claim 1, wherein the pair-extraction element calculates the coincidence of the signal

10 intensity of the first projection portion and the signal intensity of the second projection portion, extracts a combination showing high coincidence on a priority basis, as a pair, and assigns a high weight to the signal-intensity coincidence of a pair corresponding to the frequency

15 difference.

3. The radar according to Claim 1, comprising a scanning element for changing the beam azimuth of the transmission signal over a predetermined scanning range, wherein the pair-extraction element calculates the coincidence of

20 azimuths of the first and second projection portions, extracts a combination showing high coincidence on a priority basis, as a pair, and assigns a high weight to the azimuth coincidence of a pair corresponding to the frequency difference.

25 4. The radar according to Claim 2, comprising a scanning

element for changing the beam azimuth of the transmission signal over a predetermined scanning range, wherein the pair-extraction element calculates the coincidence of azimuths of the first and second projection portions,

5   extracts a combination showing high coincidence on a priority basis, as a pair, and assigns a high weight to the azimuth coincidence of a pair corresponding to the frequency difference.

5.   The radar according to Claim 1, comprising a scanning

10   element for changing the beam azimuth of the transmission signal over a predetermined scanning range, wherein the pair-extraction element calculates the degree of correlation between signal-intensity profiles in the azimuth direction of the first and second projection portions, extracts a

15   combination showing a high correlation degree on a priority basis, as a pair, and assigns a high weight to the correlation degree of a pair showing the frequency difference.

6.   The radar according to Claim 2, comprising a scanning

20   element for changing the beam azimuth of the transmission signal over a predetermined scanning range, wherein the pair-extraction element calculates the degree of correlation between signal-intensity profiles in the azimuth direction of the first and second projection portions, extracts a

25   combination showing a high correlation degree on a priority

basis, as a pair, and assigns a high weight to the correlation degree of a pair showing the frequency difference.

7. The radar according to Claim 3, comprising a scanning element for changing the beam azimuth of the transmission signal over a predetermined scanning range, wherein the pair-extraction element calculates the degree of correlation between signal-intensity profiles in the azimuth direction of the first and second projection portions, extracts a combination showing a high correlation degree on a priority basis, as a pair, and assigns a high weight to the correlation degree of a pair showing the frequency difference.

8. The radar according to Claim 4, comprising a scanning element for changing the beam azimuth of the transmission signal over a predetermined scanning range, wherein the pair-extraction element calculates the degree of correlation between signal-intensity profiles in the azimuth direction of the first and second projection portions, extracts a combination showing a high correlation degree on a priority basis, as a pair, and assigns a high weight to the correlation degree of a pair showing the frequency difference.

9. The radar according to Claims 1 to 8, comprising a predetermined element, wherein where a predetermined number

of the pairs showing the frequency difference exist along at least one of the azimuth direction and the distance direction, the element determines that the pairs indicate a continuous stationary object.

5   10. The radar according to Claims 1 to 8, comprising a predetermined element, wherein where an object corresponding to a pair that does not correspond to the frequency difference is detected in a predetermined area where the continuous stationary object exists, the element determines
10   that the pair extraction is an error.

    11. The radar according to Claim 9, comprising a predetermined element, wherein where an object corresponding to a pair that does not correspond to the frequency difference is detected in a predetermined area where the
15   continuous stationary object exists, the element determines that the pair extraction is an error.

    12. The radar according to Claims 1 to 8, comprising a predetermined element, wherein where a predetermined object is detected beyond the continuous stationary object, the
20   element does not output the detection result.

    13. The radar according to Claim 9, comprising a predetermined element, wherein where a predetermined object is detected beyond the continuous stationary object, the element does not output the detection result.

25   14. The radar according to Claim 10, comprising a

predetermined element, wherein where a predetermined object is detected beyond the continuous stationary object, the element does not output the detection result.

15. The radar according to Claim 11, comprising a predetermined element, wherein where a predetermined object is detected beyond the continuous stationary object, the element does not output the detection result.